Page 2, Paragraph Beginning at Line 8

2. Description of Related Art

At present, patient tables, especially those for bearing the patient during diagnostic and therapeutic treatment, by using machines for diagnosis and therapy, are deemed to be separate from the structure of these machines. In order to allow limbs or anatomical regions of the patient's body to be inserted into the operating area of the machine, such as an operating surface, a chamber or a cavity two solutions are essentially applied.

Page 2, Paragraph Beginning at Line 17

In the first solution, where the structure of the machine permits, the table, having a substantially conventional shape is fully or partially inserted into the structure thereof. This solution involves a huge size of machine, which has a very high purchase and installation cost. Large machines are generally cumbersome and heavy and cannot be placed in premises having a normal construction as regards volume and resistance of floors. This involves cost increases, which are added to the higher cost of the machine.

Page 3, Paragraph Beginning at Line 3

An alternative solution, generally used with low and medium size and low and medium cost machines, particularly in Nuclear Magnetic Resonance, consists in simply placing tables next to the operating surfaces, chambers or cavities of machines. This can be also done by providing coupling constraints between the two structures, in order to obtain certain relative positions, although the machines and the table are always separate and distinct units, as regards both construction and structural synergy. The overall dimensions of the machine with the addition of the table increases considerably and, substantially, to an extent corresponding to the dimensions of the table. When, e.g. in Nuclear Magnetic Resonance machines, a limb or anatomical region of the patient is to be positioned inside a cavity or onto an operating surface, the patient has to be moved, or convertible arm-chairs must be provided, which have tilting parts or the like, or the dimensions of the supporting surfaces of tables have to be limited to a part of the patient body, i.e. to the part which is intended to stay outside the cavities, chambers or operating surfaces.

Page 4, Paragraph Beginning at Line 12

SUMMARY OF THE INVENTION

C5 The invention achieves the above purposes by providing a machine in combination with table as described above and in which the table is provided with at least one peripheral recess in its supporting surface or in a part thereof which recess is complemented by a side of the operating surface forming part of the structure of the machine, particularly of the delimitation walls of the cavity or chamber for accommodating the patient.

Page 13, Paragraph Beginning at Line 6

Brief Description of the Drawings

C6 The characteristics of the invention and the advantages derived therefrom will appear more clearly from the following description of certain exemplary embodiments, illustrated without limitation by the accompanying drawings, in which:

Page 14, Paragraph Beginning at Line 15

Detailed Description of the Preferred Embodiments

C7 The embodiments illustrated herein particularly relate to a Nuclear Magnetic Resonance Imaging machine in combination with a table according. This combination shall not be deemed to be limited to the scope of the invention. In fact, instead of the lower horizontal side 201 of the magnet cavity, which side 201 complements the recess 301a of the table, the part for complementing the recess 302 of the table may consist of work or operating surfaces, or sides for delimiting operating chambers of any type and/or of any machine for diagnosis and/or therapy.

Page 15, Paragraph Beginning at Line 19

C8 cont. A table 2 is associated to the magnet 1. The table consists of two parts 102, 202. The part 102 has a supporting surface having a hollow or recess 302 having a shape complementary and a size corresponding to the lower side 201 of the magnet 1, while it can

have any outer shape, preferably a circular segment shape with an angular extension of more than 180°, such as to fully surround the central U-shaped hollow, preferably with a circular rounded portion. The part 102 of the table is designed to be fitted around the side 201 of the magnet 1, which complements the supporting surface. The part 102 of the table is supported by at least a first pair of wheeled legs (not shown), which are provided at least in the end side for connection to the other part 202 of the table, also supported by a second pair of wheeled legs, being provided on the end side opposite to the one connecting to the part 102. The supporting surface of the two parts of the table is at the same level as the side 201 of the magnet 1. The part 202 of the table, named outer part in the disclosure, rests, at the end connecting to the part 102, on a guide 5 which is supported so as to project downwardly, towards the connecting end of the part 202 of the table, by vertical pins 6 and by radial pins (not shown), arranged radially inside the guide 5. The guide 5 advantageously consists of a cylindrical section which is arched according to the outer cylindrical profile of the part 102 of the table. The part 102 of the table has a covering case 402, for covering the first pair of legs and other members, which, in the magnet-coupling condition, superposes the case 501 of the magnet, providing the machine with a particularly pleasant continuous aspect.

Page 17, Paragraph Beginning at Line 27

According to a further characteristic of the invention, which is particularly clear in figs. 4 to 10, a receiving coil 30 can be applied to the magnet 1, on the lower side 201. This coil may be either annular or C-shaped, as shown in figures 15 and 16. Since the patient may have different orientations with respect to the magnet, by rotating the part 202 of the table with respect to the part 102 associated to the magnet, the receiving coil 30 must be oriented accordingly. Here, the coil 30 has a fastening base 31 which can be rotatably mounted and locked in temporary position in the recess 401 of the side 201 of the magnet. The base 31 of the receiving coil 30 has a circular lower hollow 131, which is designed to be inserted on a guide disc 32. The guide disc 32 is mounted in the recess 410 of the lower side 201 of the magnet 1 and forms a box for accommodating a mechanism with radial wedges for locking the base of the receiving coil 30.

Page 18, Paragraph Beginning at Line 16

The locking mechanism comprises three wedges 33, which are accommodated in such a manner as to be able to slide along radial guides 34 formed in the guide disc 32, and open at the peripheral walls of said guide disc 32. A control disc 35 is mounted in such a manner as to be able to rotate about its own axis inside the guide disc 32. The control disc has three axial projections 135, coinciding with the wedges 33 and each engaged in an inclined slot 133 of the corresponding wedge. A control lever 36 is, pivoted coaxially to the control disc 35 and connected thereto for common rotation by an axial tooth 37 of the disk, the tooth engaged in a corresponding aperture of the lever in a radial intermediate position between the peripheral edge and the center of the control disc 35. The control lever projects out of the guide disc 32. By angularly displacing the control lever 36, the control disc 35 is caused to rotate and, thanks to the axial projections 135 engaged in the inclined slots 133 of the wedges 33, the latter are alternately moved radially out of the peripheral edge of the guide disc 32 or radially backwards.

Page 19, Paragraph Beginning at Line 8

In the peripheral wall of the circular recess 131 of the base 31 of the receiving coil, there is provided, at the same level as the radial wedges 33, an annular throat 231 whose width substantially corresponds to an intermediate thickness of the radial wedges 33. When said wedges 33 are moved radially outwards, they penetrate and press against a lower surface 231a of the peripheral annular throat 231 of the peripheral wall of the recess 131 of the base 31, whereby the base 31, with the receiving coil, is locked in position, the guide disc 32 being non-rotatably fastened in the recess 401 of the lower side 201 of the magnet 1.

Page 19, Paragraph Beginning at Line 20

Advantageously, as shown in figs. 6 and 7, the base 31 of the receiving coil 30 extends to the bottom side of the recess 401 for accommodating the guide disc 32, whereas the radial wedges 33 have, at their radial outer end, a perfectly upper horizontal side, while the lower side, i.e. the one oriented towards the bottom of the recess 401, is inclined. In this

way, the radial wedges 33 when pressing against the surface 231a cause the base 31 of the receiving coil 30 to be clamped against the bottom side of the housing recess 401 in the lower side 201 of the magnet 1. In order to provide a certain elasticity of the clamping movement, between the upper side of the guide disc 32 and the facing bottom side of the circular recess 131 in the base 31, elastic means 38 are provided. These elastic means advantageously consist of an annular seal, having a preferably round section, that is an O-ring, made of an elastic material, such as rubber or the like, and being held in an annular coaxial throat formed in the upper side of the guide disc 32. If required, several annular seals of this type may be provided, disposed concentrically.

Page 20, Paragraph Beginning at Line 12

Relating to the features according to figures 4 to 10 showing the receiving coil for the Magnetic Resonance Imaging Apparatus it is important to stress that also the receiving in combination with the sole MRI Apparatus considered by leaving can be used independently of the table 2. In fact such combination of receiving coil and apparatus might be applied also when conventional tables or seats are used with the MRI Apparatus.

Page 20, Paragraph Beginning at Line 29

Figs. 11 to 19 show a second embodiment of the invention. In this exemplary embodiment, the magnet 1 has a comparatively small size as regards the surfaces of the sides 201 and 101, and especially the depth of the lower side 201 of the magnet 1 is smaller than the overall width of a table 2A of an approximately conventional size.

Page 21, Paragraph Beginning at Line 7

The dimension towards the closed or substantially closed vertical wall 301 is also a submultiple of the length and/or width of the table 2A. In this example, the side 201 has an arched or semicircular or U shape. The table 2A has, in the area substantially corresponding to the shoulder and to the upper limbs and in the area corresponding to the leg and to the lower limbs of a patient, a recess 302, which can be normally closed or filled in by a

C15 Enc

removable, complementarily shaped member 502. This removable complementary member 502 may be, for example, inserted in and removed from its position by using simple sliding guides (not shown in detail), which can consist of a peripheral throat formed in the wall of the recess 302 or of the completion member 502 and of a rib formed in the peripheral wall of the other part.

Page 21, Paragraph Beginning at Line 22

C16

As shown in the figures, the recesses 302 have such a size that they do not affect the comfortable support of the patient on the table 2A, since they can be bridged by the patient body with no effort and ensuring the support thereof.

Page 21, Paragraph Beginning at Line 27

C17

When the width of the table allows to do so, a recess 302 may be also provided at one end of the table 2, for head and neck testing. However, the configuration as shown in the figures also allows head and neck testing by appropriately positioning the patient on the table without affecting his/her support and comfort.

Page 25, Paragraph Beginning at Line 2

C18

According to a further feature to the machine and particularly to the table a surface for scanning a body part under the influence of force is provided. This surface 60 indicated in figs. 16 and 19 is secured to the table. The means for securing the said surface to the table may be of whichever known kind, for example one or more securing rods protruding form the lower edge of the surface and being engageable in correspondent holes in the table. The securing rods may be toothed and may cooperate with removable tooth engaging means located in the holes for regulating the height. The securing rods may also be telescopic having radial means such as screws for blocking them in the desired elongation position. Obviously other securing means might be provided as for example securing brackets which are disegnageably fixed to the table frame.